Met Office

NEWS

2022 expected to continue run of world's warmest years

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The Met Office annual global temperature forecast for 2022 suggests that next year will continue as one of the Earth's hottest years.

The average global temperature for 2022 is forecast to be between 0.97°C and 1.21°C (with a central estimate of 1.09 °C) above the average for the pre-industrial period (1850-1900): the eighth year in succession when temperatures have exceeded 1.0°C above pre-industrial levels.

For the second year in succession, the Met Office global temperature forecast for the coming year, is slightly lower than some previous years since 2015. This is largely because of the influence of La Niña in the tropical Pacific, where sea surface temperatures are below average. La Niña has a temporary cooling effect on global average temperature.

Met Office scientist, Dr Nick Dunstone said: "Global temperature has been slightly suppressed during 2021 because of the cooling influence of La Niña in the tropical Pacific. With another La Niña now underway, making this a so called 'double-dip' La Niña, it is not surprising that we are forecasting another relatively cool year for global temperatures when compared with the run of years since 2015.

"However, it is still likely that 2022 will be above 1.0°C and hence continue the series of warmest years for global temperature since 1850."

Prof. Adam Scaife, Head of Long Range Prediction at the Met Office, added: "These forecasts for the coming year illustrate that the rise of greenhouse gases in the atmosphere is now warming the globe at such a rate as to make the El Nino years at the end of the 1990s cooler than the La Niña years two decades later."

Warmest years since 2015

The series of warmest years began in 2015; the first year when global temperatures exceeded 1.0°C above the pre-industrial period (1850-1900). The forecast is based on the key drivers of the global climate, but it doesn't include unpredictable events such as large volcanic eruptions, which would cause a temporary cooling.

Dr Doug Smith, one of our leading experts in climate prediction, added: "The fact that global average temperatures have been above 1.0°C since 2015 masks the considerable temperature variation across the world. Some locations such as the Arctic have warmed by several degrees since pre-industrial times."

The Met Office's forecast for the 2021 global mean temperature, issued at the end of 2020 (0.99 °C to 1.23 °C with a central estimate of 1.11°C), agrees closely with the latest observations of global temperature so far this year. Data from Jan-Sept 2021 shows the global mean temperature is around 1.09ºC above pre-industrial levels.

The global temperature series – which has been updated this year - is now an average of six datasets as used by the WMO and IPCC: HadCRUT5, NOAAGlobalTemp, GISTEMP, Berkeley Earth and the ERA5 and JRA55 reanalyses. The use of these temperature series adds around 0.08°C on average to the global temperature since pre-industrial times compared to previous estimates.

Comparison with previous years

Table 1. Met Office Annual Global Mean Surface Temperature Forecasts and observed GMST for the period 2000-2021 from combined data series, compared to the pre-industrial 1850-1900 period.

Year	Best estimate of forecast range (in °C)	Observed global temperature anomaly
2022	1.09*	n/a
2021	1.11	1.09 [Note 1]
2020	1.19	1.27
2019	1.18	1.24
2018	1.08	1.11
2017	1.14	1.19
2016	1.23	1.28
2015	1.03	1.15
2014	0.96	1.00
2013	0.96	0.94
2012	0.87	0.91

2011	0.83	0.87
2010	0.97	1.00
2009	0.83	0.92
2008	0.76	0.79
2007	0.93	0.91
2006	0.84	0.91
2005	0.90	0.95
2004	0.89	0.81
2003	0.94	0.88
2002	0.86	0.89
2001	0.86	0.81
2000	0.80	0.66

1. Preliminary value for 2021, averaged up to September 2021 (inclusive)

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